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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HALPERN, MARK

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 12/12/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/933,408

Applicant(s)

KEHRER ET AL.

Examiner

Mark Halpern

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 18-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3&6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

- 1) Applicant's election without traverse of invention I, drawn on claims 1-17, in Paper No. 5 is acknowledged.

Claims 18-43, are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Claim Objections***

- 2) Claim 10 construction or dependency is not proper. The claim recites a polysaccharide that comprises starch. Since the claim stems from claim 9 which recites two other selections, polysaccharide may not be the element chosen from the group of claim 9.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 3) Claims 2-3, 6, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "total polyanion acid groups" in line 1, and the limitation "total polycation groups" in line 2. There is insufficient antecedent basis for the limitations in the claim.

Claim 6 recites "about 1 per 50 units". The claim is not clear as to what units are being referred.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4) Claims 1-3, 8-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (5,338,406).

Claims 1, 8: Smith discloses a polyelectrolyte complex that when incorporated into an aqueous suspension of cellulosic fibers would improve the strength of the paper formed. The polyelectrolyte complex includes an anionic polymer and a cationic polymer. The anionic polymer charge density is less than 5 meq/gram. The cationic polymer charge density is 0.2 to 4 meq/gram (Abstract, and col. 1, lines 4-15). It would have been obvious, to one skilled in the art at the time the invention was made, that the cationic polymer charge of present "about 6... meq/gram" be construed on 4 meq/gram of Smith. See MPEP 2173.05 (b) regarding the interpretation of the term "about".

Claims 2-3, 13: the ratio of polyanion group to polycation group is disclosed as from 100:4 to 1:40 (col. 6, lines 29-33).

Claims 9-10: polysaccharides (col. 4, line 48), and a starch (col. 8, line 18) are disclosed.

Claim 11: sizes, defoamers, wetting agents inorganic fillers are disclosed (col. 8, lines 31-33).

Claim 12: quaternary amine modified waxy maize starch is disclosed (col. 8, lines 17-18).

Claim 14: the anionic polymer is sodium methacrylate (col. 5, lines 4-39).

Claims 15-16: the cationic polymer is diallyldimethylammonium chloride (DADMAC) (col. 4, lines 42-59).

Claim 17: the anionic polymer is weakly acidic as exhibited by a pH of 6.5 (col. 14, lines 45-50).

5) Claims 4-7, 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Economou (3,660,338). Smith is applied as above for claim 1, Smith fails to disclose the molecular weight of the anionic and cationic polymers, and that the anionic polymer has a crosslinked density of up to 1 per 50 units. Economou discloses an amphoteric strengthening agent for paper that is a self-crosslinked composition of a polyanionic polymer and a polycationic polymer. The molecular weight of the polymers is in excess of 50,000. The crosslinking of the anionic polymers is 90:10 of acrylamide to acrylic acid (col. 2, lines 43-68, col. 5, lines 25-30, and col. 5, lines 65-72). It would have been obvious, to one skilled in the art at the time the invention was made, to

combine the teachings of Smith and Economou, because such a combination would expand the range of strengthening additives in the design of Smith.

Claim 17: anionic polymers are weakly acidic (Economou, col. 5, lines 25-30).

***Conclusion***

6) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Halpern whose telephone number is 703-305-4522. The examiner can normally be reached on Mon-Fri, (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7718 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Mark Halpern  
Patent Examiner  
Art Unit 1731

December 10, 2002